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=> FILE CAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'CAPLUS' ENTERED AT 10:18:43 ON 10 MAR 2003
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FILE COVERS 1907 - 10 Mar 2003  VOL 138 ISS 11
FILE LAST UPDATED: 9 Mar 2003  (20030309/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> S COMPOSITE(L)CARBON(L)(FIBER OR FIBRE)
        236702 COMPOSITE
        143182 COMPOSITES
        269912 COMPOSITE
                  (COMPOSITE OR COMPOSITES)
        958961 CARBON
         21761 CARBONS
        967266 CARBON
                  (CARBON OR CARBONS)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                  (FIBER OR FIBERS)
          2353 FIBRE
          1587 FIBRES
          3804 FIBRE
                  (FIBRE OR FIBRES)
L1       23383 COMPOSITE(L)CARBON(L)(FIBER OR FIBRE)

=> S ELECTRICALLY(L)CONDUCTIVE(L)RESIN(L)MATRIX
         33812 ELECTRICALLY
        873865 ELEC
           372 ELECS
        873951 ELEC
                  (ELEC OR ELECS)
        887294 ELECTRICALLY
                  (ELECTRICALLY OR ELEC)
        105724 CONDUCTIVE
            32 CONDUCTIVES
        105745 CONDUCTIVE
                  (CONDUCTIVE OR CONDUCTIVES)
        502820 RESIN
        341061 RESINS
        620292 RESIN
                  (RESIN OR RESINS)
        384812 MATRIX
```

```
         52810 MATRIXES
          7069 MATRICES
        412007 MATRIX
                 (MATRIX OR MATRIXES OR MATRICES)
L2         197 ELECTRICALLY(L)CONDUCTIVE(L)RESIN(L)MATRIX

=> S FIRST(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)CARBON(L)(FIBER OR
FIBRE)(L)MAT
        803597 FIRST
            46 FIRSTS
        803633 FIRST
                 (FIRST OR FIRSTS)
         25983 NONWOVEN
          2529 NONWOVENS
         26213 NONWOVEN
                 (NONWOVEN OR NONWOVENS)
           964 UNWOVEN
        581025 NON
            30 NONS
        581049 NON
                 (NON OR NONS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
          1999 NON-WOVEN
                 (NON(W)WOVEN)
         47331 UN
          1664 UNS
         48989 UN
                 (UN OR UNS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
            10 UN-WOVEN
                 (UN(W)WOVEN)
        958961 CARBON
         21761 CARBONS
        967266 CARBON
                 (CARBON OR CARBONS)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                 (FIBER OR FIBERS)
          2353 FIBRE
          1587 FIBRES
          3804 FIBRE
                 (FIBRE OR FIBRES)
         16427 MAT
          7923 MATS
         20250 MAT
                 (MAT OR MATS)
L3           3 FIRST(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)CARBON(
               L)(FIBER OR FIBRE)(L)MAT

=> S SECOND(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)(FIBER OR
FIBRE)(L)MAT
        371325 SECOND
          9477 SECONDS
        380266 SECOND
                 (SECOND OR SECONDS)
         25983 NONWOVEN
          2529 NONWOVENS
```

```
         26213 NONWOVEN
                 (NONWOVEN OR NONWOVENS)
           964 UNWOVEN
        581025 NON
            30 NONS
        581049 NON
                 (NON OR NONS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
          1999 NON-WOVEN
                 (NON(W)WOVEN)
         47331 UN
          1664 UNS
         48989 UN
                 (UN OR UNS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
            10 UN-WOVEN
                 (UN(W)WOVEN)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                 (FIBER OR FIBERS)
          2353 FIBRE
          1587 FIBRES
          3804 FIBRE
                 (FIBRE OR FIBRES)
         16427 MAT
          7923 MATS
         20250 MAT
                 (MAT OR MATS)
L4          22 SECOND(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)(FIBER
               OR FIBRE)(L)MAT

=> S FIRST LAYER(L)THERMOPLASTIC RESIN
        803597 FIRST
            46 FIRSTS
        803633 FIRST
                 (FIRST OR FIRSTS)
       1008072 LAYER
        452263 LAYERS
       1238128 LAYER
                 (LAYER OR LAYERS)
          3799 FIRST LAYER
                 (FIRST(W)LAYER)
         85344 THERMOPLASTIC
         21819 THERMOPLASTICS
         92049 THERMOPLASTIC
                 (THERMOPLASTIC OR THERMOPLASTICS)
        502820 RESIN
        341061 RESINS
        620292 RESIN
                 (RESIN OR RESINS)
         22868 THERMOPLASTIC RESIN
                 (THERMOPLASTIC(W)RESIN)
L5          18 FIRST LAYER(L)THERMOPLASTIC RESIN

=> S SECOND LAYER (L)THERMOPLASTIC RESIN
        371325 SECOND
          9477 SECONDS
```

```
        380266 SECOND
                 (SECOND OR SECONDS)
       1008072 LAYER
        452263 LAYERS
       1238128 LAYER
                 (LAYER OR LAYERS)
          3590 SECOND LAYER
                 (SECOND(W)LAYER)
         85344 THERMOPLASTIC
         21819 THERMOPLASTICS
         92049 THERMOPLASTIC
                 (THERMOPLASTIC OR THERMOPLASTICS)
        502820 RESIN
        341061 RESINS
        620292 RESIN
                 (RESIN OR RESINS)
         22868 THERMOPLASTIC RESIN
                 (THERMOPLASTIC(W)RESIN)
L6           19 SECOND LAYER (L)THERMOPLASTIC RESIN

=> D HIS

     (FILE 'HOME' ENTERED AT 10:18:17 ON 10 MAR 2003)

     FILE 'CAPLUS' ENTERED AT 10:18:43 ON 10 MAR 2003
L1        23383 S COMPOSITE(L)CARBON(L)(FIBER OR FIBRE)
L2          197 S ELECTRICALLY(L)CONDUCTIVE(L)RESIN(L)MATRIX
L3            3 S FIRST(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)CARB
L4           22 S SECOND(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)(FI
L5           18 S FIRST LAYER(L)THERMOPLASTIC RESIN
L6           19 S SECOND LAYER (L)THERMOPLASTIC RESIN

=> S L2 AND L3 AND L4 AND L5 AND L6
L7            0 L2 AND L3 AND L4 AND L5 AND L6

=> S L1 AND L4 AND L5 AND L6
L8            0 L1 AND L4 AND L5 AND L6

=> S L3 AND L4 AND L5 AND L6
L9            0 L3 AND L4 AND L5 AND L6

=> S L1 AND L2 AND L3
L10           0 L1 AND L2 AND L3

=> S FIRST CARBON FIBER MAT
        803597 FIRST
            46 FIRSTS
        803633 FIRST
                 (FIRST OR FIRSTS)
        958961 CARBON
         21761 CARBONS
        967266 CARBON
                 (CARBON OR CARBONS)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                 (FIBER OR FIBERS)
         16427 MAT
          7923 MATS
         20250 MAT
                 (MAT OR MATS)
L11           0 FIRST CARBON FIBER MAT
                 (FIRST(W)CARBON(W)FIBER(W)MAT)
```

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=> S SECNOND CARBON FIBER MATE
             0 SECNOND
        958961 CARBON
         21761 CARBONS
        967266 CARBON
                 (CARBON OR CARBONS)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                 (FIBER OR FIBERS)
          2138 MATE
          1169 MATES
          3200 MATE
                 (MATE OR MATES)
L12          0 SECNOND CARBON FIBER MATE
                 (SECNOND(W)CARBON(W)FIBER(W)MATE)

=> S NONWOVEN OR NON-WOVEN OR UNWOVEN OR UN-WOVEN
         25983 NONWOVEN
          2529 NONWOVENS
         26213 NONWOVEN
                 (NONWOVEN OR NONWOVENS)
        581025 NON
            30 NONS
        581049 NON
                 (NON OR NONS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
          1999 NON-WOVEN
                 (NON(W)WOVEN)
           964 UNWOVEN
         47331 UN
          1664 UNS
         48989 UN
                 (UN OR UNS)
         18335 WOVEN
            90 WOVENS
         18402 WOVEN
                 (WOVEN OR WOVENS)
            10 UN-WOVEN
                 (UN(W)WOVEN)
L13      28291 NONWOVEN OR NON-WOVEN OR UNWOVEN OR UN-WOVEN

=> S CARBON (L)(FIBER OR FIBRE)
        958961 CARBON
         21761 CARBONS
        967266 CARBON
                 (CARBON OR CARBONS)
        436034 FIBER
        459034 FIBERS
        597535 FIBER
                 (FIBER OR FIBERS)
          2353 FIBRE
          1587 FIBRES
          3804 FIBRE
                 (FIBRE OR FIBRES)
L14      63643 CARBON (L)(FIBER OR FIBRE)

=> S MAT
         16427 MAT
          7923 MATS
L15      20250 MAT
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```
                (MAT OR MATS)

=> S COMPOSITE
        236702 COMPOSITE
        143182 COMPOSITES
L16     269912 COMPOSITE
                (COMPOSITE OR COMPOSITES)

=> S THERMOPLASTIC (L) RESIN
         85344 THERMOPLASTIC
         21819 THERMOPLASTICS
         92049 THERMOPLASTIC
                (THERMOPLASTIC OR THERMOPLASTICS)
        502820 RESIN
        341061 RESINS
        620292 RESIN
                (RESIN OR RESINS)
L17      34056 THERMOPLASTIC (L) RESIN

=> D HIS

     (FILE 'HOME' ENTERED AT 10:18:17 ON 10 MAR 2003)

     FILE 'CAPLUS' ENTERED AT 10:18:43 ON 10 MAR 2003
L1        23383 S COMPOSITE (L) CARBON (L) (FIBER OR FIBRE)
L2          197 S ELECTRICALLY (L) CONDUCTIVE (L) RESIN (L) MATRIX
L3            3 S FIRST (L) (NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN) (L) CARB
L4           22 S SECOND (L) (NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN) (L) (FI
L5           18 S FIRST LAYER (L) THERMOPLASTIC RESIN
L6           19 S SECOND LAYER (L) THERMOPLASTIC RESIN
L7            0 S L2 AND L3 AND L4 AND L5 AND L6
L8            0 S L1 AND L4 AND L5 AND L6
L9            0 S L3 AND L4 AND L5 AND L6
L10           0 S L1 AND L2 AND L3
L11           0 S FIRST CARBON FIBER MAT
L12           0 S SECNOND CARBON FIBER MATE
L13       28291 S NONWOVEN OR NON-WOVEN OR UNWOVEN OR UN-WOVEN
L14       63643 S CARBON (L) (FIBER OR FIBRE)
L15       20250 S MAT
L16      269912 S COMPOSITE
L17       34056 S THERMOPLASTIC (L) RESIN

=> S L13 AND L14 AND L16 AND L17
L18          23 L13 AND L14 AND L16 AND L17

=> S L15 AND L18
L19           2 L15 AND L18

=> D L19 BIB,ABS

L19  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2003 ACS
AN   2003:23392  CAPLUS
DN   138:74232
TI   Fabrication of multilayered composite materials containing
     carbon fiber
IN   Delanoy, Curt; Gillespie, John
PA   USA
SO   U.S. Pat. Appl. Publ., 9 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.         KIND  DATE           APPLICATION NO.   DATE
     ---------------    ----  --------       ---------------   --------
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PI US 2003008125 A1 20030109 US 2001-899782 20010705
PRAI US 2001-899782 20010705
AB The **composite** materials comprise: (A) a central layer of **carbon fiber** aligned in a common direction and adhered to one another by an elec. conducting polymer matrix, (B) a first and a second **nonwoven carbon fiber mat** on both surface of A resp., and (C) a first and a second **thermoplastic resin** layer applied to both exterior surfaces of B. No example was included.

=> D L19 1-2 BIB,ABS

L19 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS
AN 2003:23392 CAPLUS
DN 138:74232
TI Fabrication of multilayered **composite** materials containing **carbon fiber**
IN Delanoy, Curt; Gillespie, John
PA USA
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003008125	A1	20030109	US 2001-899782	20010705

PRAI US 2001-899782 20010705
AB The **composite** materials comprise: (A) a central layer of **carbon fiber** aligned in a common direction and adhered to one another by an elec. conducting polymer matrix, (B) a first and a second **nonwoven carbon fiber mat** on both surface of A resp., and (C) a first and a second **thermoplastic resin** layer applied to both exterior surfaces of B. No example was included.

L19 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS
AN 1993:627585 CAPLUS
DN 119:227585
TI Fiber-reinforced **thermoplastic resin** sheets and their manufacture
IN Matsuda, Tsutomu; Goto, Akira; Shibata, Tatsuya
PA Teijin Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05117411	A2	19930514	JP 1992-104658	19920423

PRAI JP 1991-117880 19910423
JP 1991-136990 19910514
AB The sheets are laminates of .gtoreq.1 layers of continuous **carbon fiber**-reinforced **thermoplastic** and .gtoreq.1 layers of heat-resistant **fiber** (HRF)-reinforced **thermoplastic** in which the **fibers** are arranged in perpendicular directions (with interlacing strength .gtoreq.1.0 kg/mm2), uniformly distributed, and free of voids with diam. greater than the **fiber** diam. The HRF (**nonwoven** or **mat**, with bulk d. .gtoreq.8 and O index .gtoreq.28%) are aramid, arom. polyester, PAN, polybenzimidazole, PET, poly(ethylene 2,6-naphthalate), or cellulosic **fibers**, and the **resins** are polyethylene, polypropylene, PVC, polycarbonates (PC),

PET, PBT, nylon 6, nylon 66, polyphenylene sulfide, ABS, or copolymers of monomers involved in these. Fire-retardant sheets are obtained by filling the **composite** sheets (contg. 10-20 vol.% **fibers**) with fire retardants. The **resins** (powders or film) are inserted between the **carbon** fabrics and the HRF in a sym. manner and then compression-molded on heating above the m.p. of the **resins** with a press to give (bent) sheets. Thus, **carbon fiber** cloths and Conex aramid **fiber** spun laces were laminated with Panlite L 1250 in the sequence PC film/**carbon fiber** cloth/PC film/aramid lace/PC film/aramid lace/PC film/**carbon fiber** cloth/PC film and compression-molded at 300.degree. for 30 min to give a 0.75-mm **fiber**-reinforced PC sheet with **fiber** vol. 50%, sp. gr. 1.36, flexural strength 60 kg/mm2, and flexural modulus 4000 kg/mm2, whereas a sheet manufd. similarly but without the aramid **fiber** laces had **fiber** vol. 35%, sp. gr. 1.36, flexural strength 50 kg/mm2, and flexural modulus 2000 kg/mm2.

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=> D HIS

     (FILE 'HOME' ENTERED AT 10:18:17 ON 10 MAR 2003)

     FILE 'CAPLUS' ENTERED AT 10:18:43 ON 10 MAR 2003
L1        23383 S COMPOSITE(L)CARBON(L)(FIBER OR FIBRE)
L2          197 S ELECTRICALLY(L)CONDUCTIVE(L)RESIN(L)MATRIX
L3            3 S FIRST(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)CARB
L4           22 S SECOND(L)(NONWOVEN OR UNWOVEN OR NON-WOVEN OR UN-WOVEN)(L)(FI
L5           18 S FIRST LAYER(L)THERMOPLASTIC RESIN
L6           19 S SECOND LAYER (L)THERMOPLASTIC RESIN
L7            0 S L2 AND L3 AND L4 AND L5 AND L6
L8            0 S L1 AND L4 AND L5 AND L6
L9            0 S L3 AND L4 AND L5 AND L6
L10           0 S L1 AND L2 AND L3
L11           0 S FIRST CARBON FIBER MAT
L12           0 S SECNOND CARBON FIBER MATE
L13       28291 S NONWOVEN OR NON-WOVEN OR UNWOVEN OR UN-WOVEN
L14       63643 S CARBON (L)(FIBER OR FIBRE)
L15       20250 S MAT
L16      269912 S COMPOSITE
L17       34056 S THERMOPLASTIC (L)RESIN
L18          23 S L13 AND L14 AND L16 AND L17
L19           2 S L15 AND L18

=> D L18 1-23 BIB,ABS

L18  ANSWER 1 OF 23  CAPLUS  COPYRIGHT 2003 ACS
AN   2003:23392  CAPLUS
DN   138:74232
TI   Fabrication of multilayered composite materials containing
     carbon fiber
IN   Delanoy, Curt; Gillespie, John
PA   USA
SO   U.S. Pat. Appl. Publ., 9 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
     ---------------   ----  --------       ---------------   --------
PI   US 2003008125      A1   20030109       US 2001-899782    20010705
PRAI US 2001-899782          20010705
AB   The composite materials comprise: (A) a central layer of
     carbon fiber aligned in a common direction and adhered
     to one another by an elec. conducting polymer matrix, (B) a first and a
```

second **nonwoven carbon fiber** mat on both surface of A resp., and (C) a first and a second **thermoplastic resin** layer applied to both exterior surfaces of B. No example was included.

L18 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 2001:780790 CAPLUS
DN 135:319257
TI Method of forming a **composite** part with complex **carbon fiber** architecture by resistive heating
IN Sloan, Mark; Blackmore, Richard D.; Lepola, William M.
PA Ihc Rehabilitation Products, USA
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001078957	A2	20011025	WO 2001-US12176	20010413
	WO 2001078957	A3	20020516		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-197136P P 20000414
AB The method includes (i) providing either a generally flat or curved forming surface, depending upon the shape of the **composite** to be formed, (ii) providing a pre-form part adapted to engage the forming surface, where pre-form part structure contains many elec. conductive C fibers, (iii) injecting or infusing **resin**, either thermoset or **thermoplastic**, into the pre-form part via an injection port, and (iv) applying an elec. current to the C fibers to resistively heat the C fibers and the pre-form part (no data). As the pre-form part heats, the **resin** permeates the part and current is further applied until the part sets. Also, the C fibers are combined with nonelec. conductive fibers to form either a flat or curved part structure. Addnl., the nonconductive fibers may be **thermoplastic** fibers that will form the **resin** matrix of the part and possibly eliminate any further injection of **resin**.

L18 ANSWER 3 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 2001:509865 CAPLUS
DN 136:135715
TI Recycling process for carbon/epoxy **composites**
AU Allred, Ronald E.; Gosau, Jan M.; Shoemaker, John M.
CS Adherent Technologies, Inc., Albuquerque, NM, 87123, USA
SO International SAMPE Symposium and Exhibition (2001), 46(2001: A Materials and Processes Odyssey, Book 1), 179-192
CODEN: ISSEEG; ISSN: 0891-0138
PB Society for the Advancement of Material and Process Engineering
DT Journal
LA English
AB The thermal depolymn. of thermoset **carbon fiber** -reinforced epoxy matrix **composites** was studied to det. the significant reaction parameters and **fiber** quality produced by a catalytic reclamation process. This process was designed to recover valuable **carbon fiber** and an org. fraction from the depolymn. of **carbon**/epoxy **composites**. Design of

expts. was used to det. significant process parameters including effects of temp., time, catalyst concn., heat transfer liq. to feedstock ratio, and agitation to est. the purity of the **carbon fiber** produced from the reaction. Significant feedstock parameters that will affect the rate of reaction were the surface area available for reaction and the thickness of the **composite**. The **carbon fibers** reclaimed from the reaction reached 99.8% **carbon** values, i.e., 0.2% residual **resin**, which is sufficient to meet the market specifications for reuse in conductive molding compds. The **fiber** tensile strength showed an 8.6% redn. after reclamation indicating that the process had little damaging effect on the **fiber**. Potential applications for the recycled **fibers** include **thermoplastic** and thermoset molding compds. and **nonwoven** sheet reinforcements. An economic anal. of a recycling business based on the catalytic depolymn. process showed that it should be profitable provided that adequate scrap **composite** feedstock can be obtained.

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 2001:31786 CAPLUS
DN 134:92546
TI Bipolar electrode for electrochemical redox reactions
IN Zocchi, Andrea; Pellegri, Alberto; Broman, Barry Michael
PA Chemieco S.r.l., Italy
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001003213	A1	20010111	WO 1999-IT196	19990701
W: AU, BR, CA, CN, ID, IL, IN, JP, KR, MX, NO, NZ, RO, RU, SG, TR, US, VN, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2341508	AA	20010111	CA 1999-2341508	19990701
AU 9946474	A1	20010122	AU 1999-46474	19990701
EP 1114482	A1	20010711	EP 1999-929701	19990701
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9913289	A	20011009	BR 1999-13289	19990701
JP 2003504806	T2	20030204	JP 2001-508523	19990701
US 6296746	B1	20011002	US 2000-529735	20000419
NO 2001001036	A	20010228	NO 2001-1036	20010228
PRAI WO 1999-IT196	A	19990701		

AB **Carbon**-base bipolar electrode for electrochem. redox reactions in an acid electrolyte in the form of a fluid impervious and elec. conductive septum, at least a face of which consists, at least partially, of a fluid pervious woven or **unwoven** elec. active fabric of **carbon fibers** or of yarns of **carbon fibers**, has an elec. conductive fluid impervious septum consisting of a **composite** of a matrix fabric in the form of a tightly knit or woven fabric of **carbon fibers** or of yarns of **carbon fibers** the pores of which are hydraulically sealed by an elec. conductive **carbon** contg. material at least partly filling the pores of said matrix fabric. The **carbon** contg. elec. conductive material may be a glassy **carbon** formed in situ by thermal conversion of a precursor material with which said matrix fabric is pre-impregnated or a polymd. thermosetting **resin** loaded with **carbon** and/or graphite particles and/or **fibers** or a thermally reflown aggregate of a **thermoplastic**

resin and **carbon** and/or graphite particles and/or **fibers**. The pervious fabric on the face of the electrode may be a raised pile of **carbon fibers**.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 5 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1998:450807 CAPLUS
DN 129:123780
TI Heat-fusible fibers with long-lasting deodorizing properties
IN Tanaka, Kazuhiko; Kuwahara, Kyuji; Ito, Hiroshi; Kawamoto, Masao; Nakakawa, Junyo
PA Kuraray Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10183426	A2	19980714	JP 1996-339446	19961219
PRAI JP 1996-339446		19961219		

AB The **fibers**, useful for diapers, medical clothes, etc., have strength retention .gtoreq.40% after **carbon** fade irradn. for 100 h and are consisting of (A) polyolefins contg. 4-valent metal phosphate salts, bivalent metal hydroxides, and photocatalysts and (B) **fiber** -forming **thermoplastic resins**, satisfying Amp .ltoreq.180.degree. and Bmp - Amp .gtoreq. 30.degree. (Amp = m.p. of the polyolefins; Bmp = m.p. of the **thermoplastic resins**), where .gtoreq.30% of the circumference of the **fibers** is occupied by the polyolefins. Thus, PET (m.p. 258.degree.) was cospun with HDPE (m.p. 135.degree.) contg. 5% deodorant [Cu(II)-Ti(IV)-SiO2-TiO2, contg. H3PO4] into a core-shell **fiber**, which was made into a tow, drawn, crimped, relaxed, and cut to give a sample showing the strength retention 90.9% and good deodorizing and antibacterial properties. A **nonwoven** fabric made from the **fiber** and PET **fiber** showed good handle.

L18 ANSWER 6 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1997:479114 CAPLUS
DN 127:98796
TI Reinforcing fiber sheets for concrete structures and reinforcing of concrete structures with fiber sheets
IN Harada, Shigehiko; Ando, Masato; Asano, Yukio; Kato, Takehiko; Hayashida, Norimitsu; Tsujimura, Tomoaki
PA Toho Rayon Co., Ltd., Japan; Arisawa Seisakusho K. K.; Kumagai Gumi Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 09132852	A2	19970520	JP 1996-94789	19960325
PRAI JP 1995-246723		19950831		

AB A **thermoplastic resin** fiber sheet having pierced holes is placed at least one side of a reinforcing fiber sheet where fibers are oriented along one direction, heated to join the sheets, and used for reinforcing concrete structures. The reinforcing fiber sheets are preferably C fiber sheets. The **thermoplastic** fiber sheets are preferably **thermoplastic resin nonwoven** fabric. The reinforcing process comprises coating an adhesive or matrix **resin** on one surface of concrete structures, putting the

reinforcing fiber sheets on the coated surface, optionally coating the matrix **resin** on the reinforcing fiber sheets, pressing the reinforcing fiber sheets, and hardening.

L18 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1997:353279 CAPLUS
DN 127:35891
TI **Composites** of fabrics and **thermoplastic resins** and manufacture thereof
IN Matsubara, Shuji; Yoshida, Takahiko
PA Toyota Motor Corp., Japan; Yoshida Chemical Industrial Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 09085841	A2	19970331	JP 1995-249412	19950927
PRAI JP 1995-249412		19950927		

AB Fabrics or **nonwoven** fabrics are coated with **thermoplastic resins** dissolved in volatile solvents, dried to form prepregs, cut, coated with the solns. again, and dried to prep. **composite** materials. Thus, carbon cloths were coated with a PMMA soln. and laminated with a PMMA sheet to prep. a decorative material for automobile instrument panels.

L18 ANSWER 8 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1996:268056 CAPLUS
DN 124:291816
TI High-strength prepreg-laminated paper **composites**
IN Katsuta, Ryutaro; Myasaka, Yosha; Kishi, Satoshi; Sakai, Hideo
PA Mitsui Toatsu Chemicals, Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 08034095	A2	19960206	JP 1994-170888	19940722
JP 3363599	B2	20030108		
PRAI JP 1994-170888		19940722		

AB The title **composites**, useful for carton boxes, partitions of inside of boxes, etc., are prepd. by laminating .gtoreq.1 side of paper (e.g., kraft paper, vinyl wallpaper) with 1-direction-arranged **fibers** (e.g., glass **fibers**, **carbon fibers**) impregnated with **thermoplastic resins** (e.g., polypropylene, polystyrene, polyethylene), and optionally covering with **nonwoven** (e.g., of PET **fibers**).

L18 ANSWER 9 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1995:753815 CAPLUS
DN 123:342666
TI Electrically conductive laminated structures and their manufacture
IN Sakamoto, Shuji; Watanabe, Katsuya; Harada, Noriaki; Fukuda, Koichi
PA Chisso Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 07148882 A2 19950613 JP 1993-321152 19931126
PRAI JP 1993-321152 19931126
AB The structures having fuzz-free surface and good wear resistance comprise in this order a substrate, a web contg. elec. conductive **fibers** and a **thermoplastic resin** layer. Thus, a polypropylene sheet was successively laminated with an elec. conductive **nonwoven** fabric comprising pitch-based **carbon fibers** and polypropylene-based **composite fibers** and an electron beam radiation-crosslinked polypropylene film to give a title structure with surface resistivity 106 .OMEGA./cm3.

L18 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1995:518799 CAPLUS
DN 122:241928
TI Electrically conductive structures showing no fluffs even under electron microscope and manufacture thereof
IN Sakamoto, Shuji; Watanabe, Katsuya; Harada, Noriaki; Sekiguchi, Yasuko
PA Chisso Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 06328630	A2	19941129	JP 1993-195152	19930712
PRAI JP 1992-219816		19920727		
JP 1993-88199		19930322		

AB The title products contain elec. conductive side-by-side elec. conductive **composite fibers** of dielec. **thermoplastic resin** and **thermoplastic resin** contg. elec. conductive filler, and the **fiber** is fused to a substrates. A polyester and a polyester contg. 30% **carbon** black were spun side-by-side in 5:1 ratio, made into a **nonwoven** fabric and hot-pressed with a polyester sheet to obtain a 1 mm-thick elec. conductive sheet.

L18 ANSWER 11 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1994:485680 CAPLUS
DN 121:85680
TI **Nonwoven** moldable **composite** and method of manufacture
IN Frank, George A.
PA Gates Formed-Fibre Products, Inc., USA
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9323596	A1	19931125	WO 1993-US3135	19930331
W: AU, CA, JP, KR				
RW: DE, ES, FR, GB, IT				
AU 9340253	A1	19931213	AU 1993-40253	19930331
AU 662421	B2	19950831		
EP 593716	A1	19940427	EP 1993-909472	19930331
EP 593716	B1	19981014		
R: DE, ES, FR, GB, IT				
JP 2633990	B2	19970723	JP 1993-520209	19930331
ES 2122001	T3	19981216	ES 1993-909472	19930331
KR 9710445	B1	19970626	KR 1994-70037	19940107
PRAI US 1992-880624	A	19920508		
WO 1993-US3135	A	19930331		

AB Title **composite** is manufd. by blending .apprx.20-60% reinforcing

fibers and .apprx.40-80% **thermoplastic** fibers having a m.p. lower than that of the reinforcing fibers, the blend is processed into a fibrous batt, which is consolidated into a **nonwoven** structure which is heated to a temp. below the m.p. of the reinforcing fibers and above the m.p. of the **thermoplastic** fibers to substantially liquefy the **thermoplastic** fibers and form a **thermoplastic resin**. The heated **nonwoven** structure is compressed to flow the liquefied **resin** to displace air voids in the **nonwoven** structure and encapsulate the first fibers, the **nonwoven** structure is cooled to form a **composite** material having substantially reduced air voids with the reinforcing fibers thoroughly encapsulated by the **resin** and **composite** material being substantially free from shrinkage when thermoformed. The stiff, lightwt. **composites** are not brittle and are compliant under thermoforming. Decorative materials, e.g., carpet, can be bonded to the **composite**.

L18 ANSWER 12 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1993:627585 CAPLUS
DN 119:227585
TI Fiber-reinforced **thermoplastic resin** sheets and their manufacture
IN Matsuda, Tsutomu; Goto, Akira; Shibata, Tatsuya
PA Teijin Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05117411	A2	19930514	JP 1992-104658	19920423
PRAI	JP 1991-117880		19910423		
	JP 1991-136990		19910514		

AB The sheets are laminates of .gtoreq.1 layers of continuous **carbon fiber**-reinforced **thermoplastic** and .gtoreq.1 layers of heat-resistant **fiber** (HRF)-reinforced **thermoplastic** in which the **fibers** are arranged in perpendicular directions (with interlacing strength .gtoreq.1.0 kg/mm2), uniformly distributed, and free of voids with diam. greater than the **fiber** diam. The HRF (**nonwoven** or mat, with bulk d. .gtoreq.8 and O index .gtoreq.28%) are aramid, arom. polyester, PAN, polybenzimidazole, PET, poly(ethylene 2,6-naphthalate), or cellulosic **fibers**, and the **resins** are polyethylene, polypropylene, PVC, polycarbonates (PC), PET, PBT, nylon 6, nylon 66, polyphenylene sulfide, ABS, or copolymers of monomers involved in these. Fire-retardant sheets are obtained by filling the **composite** sheets (contg. 10-20 vol.% **fibers**) with fire retardants. The **resins** (powders or film) are inserted between the **carbon** fabrics and the HRF in a sym. manner and then compression-molded on heating above the m.p. of the **resins** with a press to give (bent) sheets. Thus, **carbon fiber** cloths and Conex aramid **fiber** spun laces were laminated with Panlite L 1250 in the sequence PC film/**carbon fiber** cloth/PC film/aramid lace/PC film/aramid lace/PC film/**carbon fiber** cloth/PC film and compression-molded at 300.degree. for 30 min to give a 0.75-mm **fiber**-reinforced PC sheet with **fiber** vol. 50%, sp. gr. 1.36, flexural strength 60 kg/mm2, and flexural modulus 4000 kg/mm2, whereas a sheet manufd. similarly but without the aramid **fiber** laces had **fiber** vol. 35%, sp. gr. 1.36, flexural strength 50 kg/mm2, and flexural modulus 2000 kg/mm2.

L18 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1993:82414 CAPLUS
DN 118:82414

TI Improved thermal conductivity of **nonwoven** preform sheets for compression molding
IN Weeks, Gregory P.
PA du Pont de Nemours, E. I., and Co., USA
SO U.S., 6 pp. Cont. of U.S. Ser. No. 400,405, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5164255	A	19921117	US 1991-789488	19911112
	JP 03236910	A2	19911022	JP 1990-224535	19900830
	JP 3126135	B2	20010122		
PRAI	US 1989-400405	B1	19890831		

AB A **nonwoven**, planar preform sheet which lofts <2 times its compressed thickness, thereby improving the thermal cond. during preheating prior to molding, comprises a plurality of **resin** chips oriented randomly or in the same direction in the plane of the sheet. Each chip comprises parallel continuous filaments (diam. 1-50 .mu.m), e.g., glass, C, or aramid fiber coated by a **thermoplastic resin**, e g. polypropylene, polyester, or polyamide. A chip has a thickness of 1-50 filament diams. with a length:thickness ratio >100. Compression-molded articles manufd. from these **nonwoven** sheets (procedure given) have a desirable smooth surface.

L18 ANSWER 14 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1993:40478 CAPLUS
DN 118:40478
TI Wet laid fibrous thermoplastic materials and aqueous dispersion for producing same
IN Parrinello, Luciano Michael
PA PPG Industries, Inc., USA
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 491204	A2	19920624	EP 1991-120540	19911129
	EP 491204	A3	19921209		
	EP 491204	B1	19970115		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2099119	T3	19970516	ES 1991-120540	19911129
	CA 2056720	AA	19920606	CA 1991-2056720	19911203
	CA 2056720	C	19960514		
	JP 04300923	A2	19921023	JP 1991-322173	19911205
	JP 07091394	B4	19951004		
	JP 09310296	A2	19971202	JP 1997-17231	19911205
	US 5393379	A	19950228	US 1993-52296	19930422
PRAI	US 1990-622671		19901205		
	JP 1991-322173		19911205		

AB The title materials, useful for prepn. of **composites** with good phys. properties, comprise **nonwoven fibers**, thermoplastic matrix polymers, and modified thermoplastics. Thus, **composites**, prepd. from a mixt. of Fina 3860 (polypropylene) 66, sizing agent-treated glass **fibers** 30, Irgafos 168 3, Naugard 445 1, **carbon** black 0.21, Protolube 5440 (I; maleic acid-modified polypropylene emulsion) 0.41, and an aq. soln. contg. I, A 1100, maleic acid, and additives 0.29%, had tensile strength 11,000 psi, flexural strength 17,100 psi, flexural modulus 689,000 psi, and Izod impact strength 7.10 ft-lb/in.

L18 ANSWER 15 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1993:23406 CAPLUS
DN 118:23406
TI Fiber-reinforced **composite** sheets with good mechanical strength and moldability
IN Haraguchi, Keiichi; Ishimura, Shigezo
PA Asahi Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04146930	A2	19920520	JP 1990-269386	19901009
PRAI	JP 1990-269386		19901009		

AB The title sheets are prepd. by laminating reinforcing **fiber** -contg. webs or **thermoplastic fiber**- or powder-contg. sheets, and thermosetting **resin** films or prepregs. Thus, 64 g/m2 **nonwoven** sheets of 5-mm-length Panlite multifilaments were placed on the both sides of a 300 g/m2 Haikaboron 6Kf (**carbon fiber**) sheet, and jetted with high-pressure water to let Panlite **fibers** penetrated into the **carbon fiber** sheet to give a mixed sheet. Then, the mixed sheets were laminated alternatively with prepregs prepd. by impregnating 131:500 m-phenylenediamine-N,N,N',N'-tetraglycidyl-m-xylenediamine mixt. into the **carbon fiber** sheets, wrapped with Teflon films on the both sides, vacuumed, and hot pressed 1 h at 180.degree. and 5 kg/cm2 to give a **composite** sheet having no voids, good moldability at 250.degree., flexural strength 180 kg/mm2, and no change after dipping 10 h in MEK.

L18 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1992:597121 CAPLUS
DN 117:197121
TI Manufacture of **carbon fiber**-reinforced **carbon composites** by electrophoretic deposition
IN Sakagami, Seigo; Takemura, Yosuke; Wakamatsu, Tomoyuki
PA Sumitomo Electric Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04170366	A2	19920618	JP 1990-298627	19901102
PRAI	JP 1990-298627		19901102		

AB The **composites** are manufd. by prepg. a liq. contg. dispersed carbonaceous powder, e.g., C powder, having ionization-caused carrier substance (electrophoretic **resin**) and emulsion-forming **resin** adsorbed thereon, immersing a C-fiber substrate and electrode into the liq., applying a d.c. voltage between the C-fiber substrate and the electrode for uniformly depositing the carbonaceous powder on the C-fiber substrate by electrophoresis, and carbonizing the material. The emulsion-forming **resin** is a **thermoplastic** and/or thermosetting **resin** with adsorbed surfactant. The **thermoplastic resin** is selected from polyamides or polyethylene. The thermosetting **resin** is selected from melamine, epoxy, furan, phenolic, polyimide, polyamide-polyimide and/or bismaleimide **resins**. The carrier substance is a modified **thermoplastic** or thermosetting electrophoretic **resin**. The C-fiber substrate includes short fibers, long fibers, textiles, paper and/or **nonwoven** textiles.

L18 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1991:63409 CAPLUS
DN 114:63409
TI Three-dimensional reinforcing materials for fiber-based **composites**
AU Hoersch, Friedrich
CS Ulm, Germany
SO Kunststoffe (1990), 80(9), 1003-7
CODEN: KUNSAV; ISSN: 0023-5563
DT Journal
LA German
AB The use of 3-dimensional fabrics based on **carbon** or glass **fibers**, including multilayer, multiaxial **nonwoven**, and warp-knitted fabrics, as reinforcement for thermosetting **resins** and **thermoplastics** is described and discussed. Use of the reinforced plastics as glider wings and tailboards, in sandwich components, automobile bumpers, etc. is discussed briefly. Use of the reinforced plastics is discussed with respect to the fabric structure and matrix.

L18 ANSWER 18 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1991:11313 CAPLUS
DN 114:11313
TI **Composites** for preventing staining and growth of mildew and bacteria
IN Hayashi, Kiyoshige
PA High Max Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01310038	A2	19891214	JP 1988-138289	19880607
PRAI JP 1988-138289		19880607		

AB The title **composites** are manufd. by covering or sealing wire- or plate-shaped elec. conductors having elec. resistivity of 20 .times. 10-6-7 .times. 10-3 .OMEGA.-cm with org. or inorg. material films or layers contg. Cu powder and/or verdigris powder and fine graphite fiber and/or C fiber. The elec. conductive materials are selected from Cu alloy, Ti, and Ti alloy wires, expanded metals of Ti and Ti alloy, graphite fiber rope, and woven or **nonwoven** fabrics of graphite fibers and C fibers. The org. and/or inorg. films or layers are manufd. from **thermoplastic resin**, synthetic rubber, synthetic **resin** paint, or polymer cement compns. The **composites** are attached to the surface of underwater structures or the wetted surfaces of building structures to prevent staining and bacteria growth by applying elec. current.

L18 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1990:41426 CAPLUS
DN 112:41426
TI Manufacture of high-density **carbon fiber-carbon composite**
IN Sakagami, Seigo; Iwata, Koichi
PA Sumitomo Electric Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 01160868 A2 19890623 JP 1987-322088 19871217
PRAI JP 1987-322088 19871217
AB The title process comprises: adsorbing an ionizable carrier to carbonaceous micropowder, dispersing the powder into a solvent, dipping a **carbon fiber** substrate in the dispersion, applying a d.c. between the substrate and a counter electrode under mech. vibrating of the substrate to deposit the powder and carrier on the substrate, drying, molding, heating, and carbonizing. Preferably the substrate is bundled **carbon fibers**, woven fabric, or **nonwoven** cloth, and the carrier is modified **thermoplastic resin** deriv. or thermosetting **resin** deriv.

L18 ANSWER 20 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1989:77458 CAPLUS
DN 110:77458
TI Thermally bonded **nonwoven** fabric
IN Uchikawa, Akihiko; Nishida, Koji; Hosono, Yasuji; Tachi, Kazuhisa; Okamoto, Takesi; Takai, Yosuke; Nakashima, Hideo
PA Mitsubishi Petrochemical Co., Ltd., Japan; Daiwabo Co., Ltd.
SO U.S., 10 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4770925	A	19880913	US 1988-144508	19880115
	JP 63303160	A2	19881209	JP 1988-5196	19880113
	JP 08014064	B4	19960214		
	FI 8800184	A	19880718	FI 1988-184	19880115
	FI 87368	B	19920915		
	FI 87368	C	19921228		
	EP 279511	A3	19900103	EP 1988-300334	19880115
	EP 279511	B1	19940316		
	R: DE, GB, NL				

PRAI JP 1987-8736 19870117
AB Title web has a unit wt. of 10 to 40 g/m2, comprising 20-100% by wt. of a **composite fiber** with a fineness of 0.5-8 denier and 80 - 0% wt. of other **fibers** as the constituent **fibers**, the **composite fiber** comprising a first component which is an ethylene-.alpha.-olefin copolymer compn. comprising an ethylene-.alpha.-olefin copolymer contg. 0.5-4%; wt. of an .alpha.-olefin having 4-12 **carbon** atoms blended with 0.01-0.3% of a phenol type antioxidant and 0.01-0.3% of a sulfur type antioxidant, having Q-value (polydispersity) .ltoreq.4, d. of 0.930-0.950, melt flow rate of 5-50 g/10 min. and oxidn. induction time at 210.degree. of .gtoreq.10 min., and a second component which is a **thermoplastic resin** having m.p. higher by at least 20.degree. than that of the first component, with a constitutional ratio (sectional area ratio) of the first component to the second component being 35:65 to 70:30, the first component of the **composite fiber** forming at least a proportion of the **fiber** surface continuously along the length of each **fiber** and adhering through melting mutually the constituent **fibers**. These webs have high fabric tenacity and soft hand. A **composite fiber** from 1-butene-ethylene copolymer (2.5:97.5) (Q value 3.3) sheath contg. 0.05% 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)isocyanurate and a polypropene core with a 50/50 sheath core ratio was manufd. and had a denier of 2. The **fibers** were cut to give 51 mm stable **fibers**, carded, and subjected to heat treatment at 125.degree.-145.degree. for 2-30 s to give **nonwoven** webs. These webs gave high **nonwoven** fabric tenacity after heat treatment at .gtoreq.135.degree., and also exhibit high fabric tenacity at 130.degree.. These webs have a soft hand.

L18 ANSWER 21 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1984:532094 CAPLUS
DN 101:132094
TI **Carbon fiber** reinforced **composite** sheet
PA Mitsubishi Rayon Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59093346	A2	19840529	JP 1982-202171	19821119
PRAI JP 1982-202171		19821119		

AB **Composite** sheets which can be heated, then stamped between cooled molds to form reinforced plastic articles in rapid cycles are manufd. by impregnating sheets (0.005-0.2 mm thick, 5-400 g/m2) of 10-80% continuous **carbon fibers** with **thermoplastic resins**. Thus, a **nonwoven** sheet (0.1 mm thick, 100 g/m2) composed of C **fibers** and poly(vinyl acetate) binder was covered with a polycarbonate **resin** film, heated, and pressed to form a **composite** sheet contg .apprx.30% **fibers**. When 2 of the sheets were stacked together, IR heated to 240.degree., and pressed between molds at 120.degree. for 50 s they formed trays which had flexural strength 34.4 kg/mm2, vs. 20.6 kg/mm2 for injection-molded trays of the same polymer filled with 30% chopped C **fibers**.

L18 ANSWER 22 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1979:88669 CAPLUS
DN 90:88669
TI The development of **non-woven** fabrics for structural and non-structural **composite** applications
AU Wagle, D. G.; Beshore, C. S.; Quick, J. R.
CS Int. Paper Co., USA
SO Compos. Mater. Automob. Ind., [Prepr.] ASME Winter Annu. Meet. (1978), 193-206. Editor(s): Kulkarni, Satish V.; Zweben, Carl H.; Pipes, R. Byron. Publisher: ASME, New York, N. Y.
CODEN: 39UUAS
DT Conference
LA English
AB **Nonwoven** fabrics produced by modified papermaking techniques incorporate 1 fiber type or blends of different fibers and are suitable for the prodn. of fiber-reinforced **composites**. The fabrics can be molded with either thermosetting or **thermoplastic resins** to form structural materials that can be stacked and stamped into the desired shape.

L18 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2003 ACS
AN 1974:28321 CAPLUS
DN 80:28321
TI Lamination of fabrics with a layer of **thermoplastic resin**, synthetic or natural rubber
IN Nakai, Shinzo; Hayashi, Tokuyuki; Akigusa, Yozo
PA Hiraoka Shokusen K. K.
SO Jpn. Tokkyo Koho, 2 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 47047552	B4	19721130	JP 1970-23323	19700319

AB A **thermoplastic resin** or natural or synthetic rubber was coated onto a release-treated base cloth, a knitted, woven, or

nonwoven fabric was applied to the coated surface, the **composite** was heated, and the fabric-**resin** or -rubber laminate was released from the base cloth after cooling. Suitable materials for the base cloth were copper [7440-50-8], aluminum [7429-90-5], iron [7439-89-6], nickel [7440-02-0], and stainless steel [12597-68-1] wire, polyester, poly(vinyl alc.), glass **fiber**, **carbon** [7440-44-0] **fiber**, cotton, and flax. Thus, 300 g/m2 soln. of 25% ethyl acrylate-butyl acrylate polymer [26353-42-4] in EtOAc 100, TiO2 2.5, and **carbon** black 1 part was coated onto a Si-coated nylon fabric with warp d. 21/2.54 cm and weft d. 22/2.54 cm and dried 1 min at 80.deg.. A Vinylon canvas was applied, the **composite** was dried 5 min at 110.deg., and the laminate was removed from the base cloth.

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	169.76	169.97

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-16.93	-16.93

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